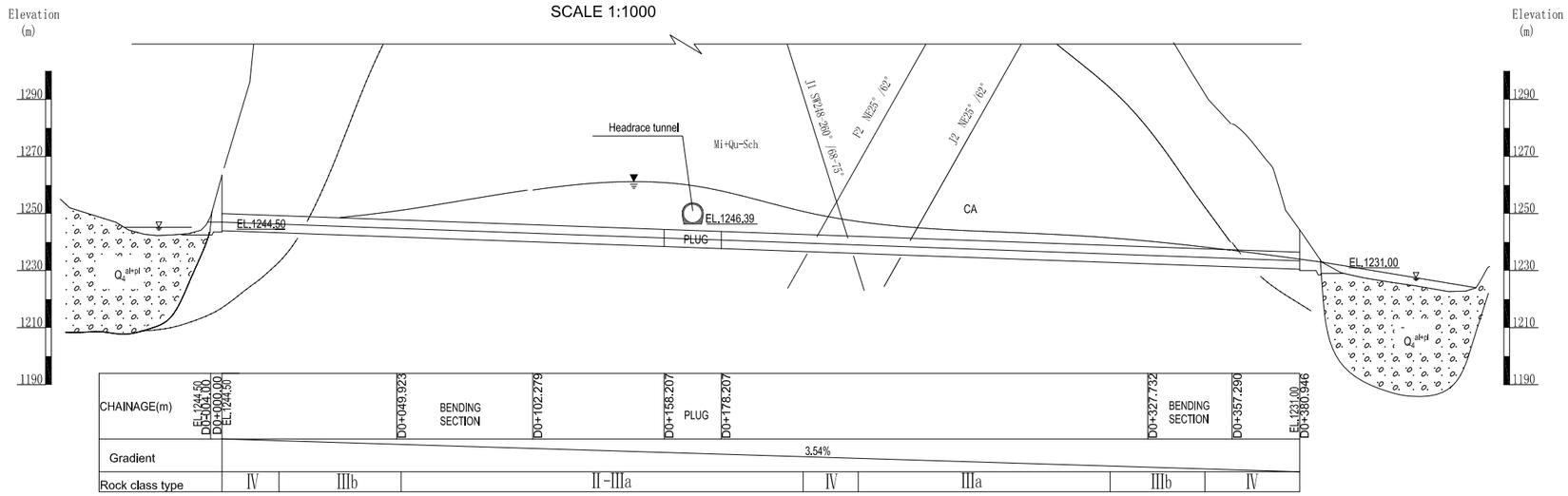
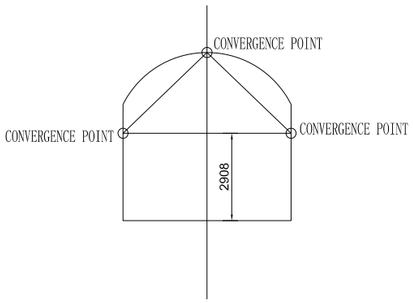
MONITORING LONGITUDINAL PROFILE OF DIVERSION TUNNEL

SCALE 1:1000

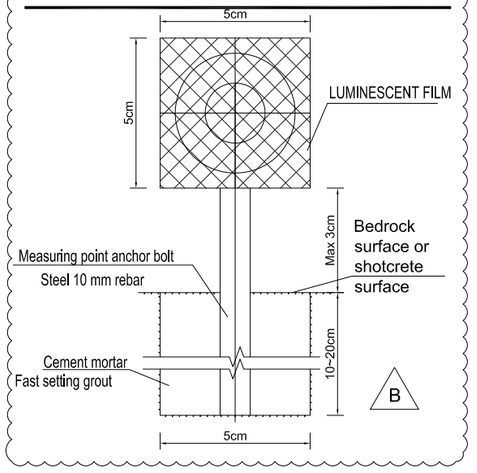


TYPICAL LAYOUT SECTION FOR CONVERGENCE MONITORING

SCALE 1:100



SKETCH OF TOTAL STATION REFLECTOR



Technical requirements:

1.Monitoring items: surrounding rock deformation monitoring.

2.Monitoring method: convergence monitoring adopting total station, monitoring points affixed with reflector.The reflector is self-adhesive and can also be fixed with rebar.

4.Monitoring accuracy/error limit: 1mm.

5.Monitoring sections setting: convergence monitoring sections shall be set/arranged as per surrounding rock conditions, the following general principles/spaces shall be followed to each rock classification:

(1) In Class I and II there is generally no monitoring required, only if instructed.

(2) Class III, not greater than 50m; Class IV, not greater than 40m; Class V,not greater than 30m;

(3) Tunnel portal section, 5 ~ 10m.

For portal tunnel section, shallow buried section, soft weak stratum or tunnel section with poor geological conditions, the monitoring sections shall be properly increased as per onsite OE.

6. Measuring frequency:

(1)The monitoring section shall be set as soon as possible;Points need to be protected from fly-rock.

(2)The initial/first monitoring shall be carried out immediately after the installation of the instrument and prior to the tunnel face advancing; The surveyor shall be available during installation.

(3)To section within 3 times tunnel diameter from face, one time measurement to one round excavation,at least one time/day;

(4)To section beyond 3 times tunnel diameter, one time/week.

(5) The frequency shall be adjusted to the experienced rate of displacements of the targets

7.Stop convergence monitoring after lining.

NOTE

1. This set of drawing is the monitoring layout of layout of diversion tunnel .
2. All dimensions are in millimeters, and coordinates, chainage and elevation are in meters.
3. Besides convergence measurement, other monitoring items can be carried out as per actual conditions and request of Employer or onsite OE during tunnel construction.
4. The number of monitoring sections, the number of targets per section and the frequency of monitoring indicated in this drawing is tentative and subject to the instructions of the OE at the spot.

SCALE:

1:1000 0 10 20 30 40 50m

1:100 0 1 2 3 4 5m

REFERENCE DRAWINGS

UT1-C-010-CVL-DG-42001	ARRANGEMENT DRAWING OF DIVERSION TUNNE
UT1-C-010-CVL-DG-42003	EXCAVAITON AND INITIAL SUPPORT DRAWING OF DIVERSION TUNNEL
UT1-C-845-CVL-DG-70006	LAYOUT DRAWING OF MONITORING FOR INVESTIGATION TUNNEL

SYMBOL AND LEGEND

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REV. NO.	DATE	DESCRIPTION	DRAWN	CHKD.	APPD.
B	24.JAN.2022	FOR APPROVAL	CUI.J.W	YUAN.Q.S	C.S.L L.W.G
A	12.OCT.2021	FOR APPROVAL	CUI.J.W	YUAN.Q.S	C.S.L L.W.G

PROJECT TITLE

Upper Trishuli-1 HEP (216MW)

OWNER

NWEDC

OWNER'S ENGINEER

TRACTEBEL ENGIE jade CONSULT

CONTRACTOR

DOOSAN Doosan Heavy Industries & Construction

DRAWING TITLE

LAYOUT DRAWING OF MONITORING FOR DIVERSION TUNNEL

INDEX	DRAWING NUMBER	SHEET NO.	REV. NO.
A	UT1-C-845-CVL-DG-70004	1 OF 1	B

A1 (594 x 841 MM)